Features

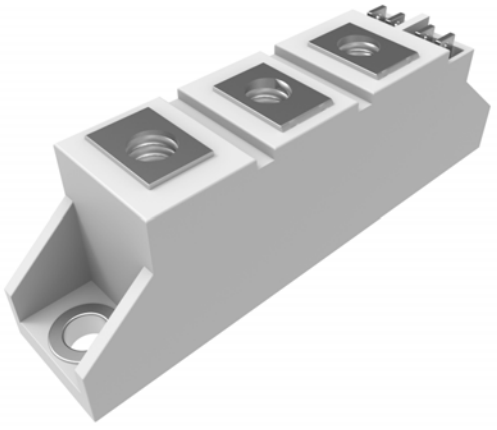
- Lead Free Finish/RoHS Compliant (NOTE 1)("P" Suffix designates RoHS Compliant. See ordering information)
- International standard package
- Heat transfer through aluminum oxide DBC ceramic isolated metal baseplate
- Glass passivated chip
- Simple Mounting

25 Amp THYRISTOR MODULE 1600 Volts

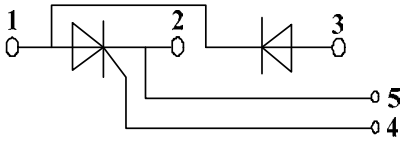
Applications

- Power Converters
- Lighting Control
- DC Motor Control and Drives
- Heat and temperature control

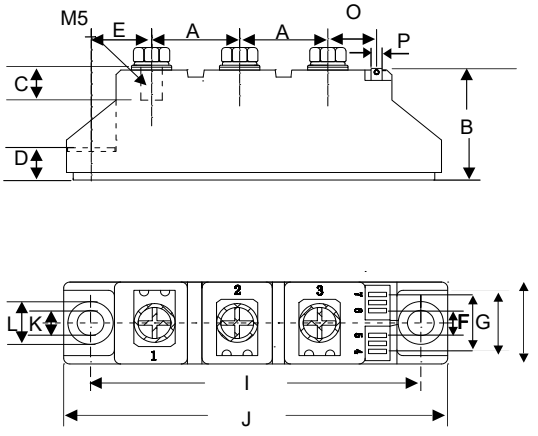
MCC Part Number	V_{RRM}	V_{RSM}
MT25CB16T1	1600V	1700V



Circuit



T1



DIMENSIONS					
DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	0.776	0.799	19.50	20.50	
B	1.169	1.193	29.50	30.50	
C	0.343	0.366	8.50	9.50	
D	0.323	0.346	8.00	9.00	
E	0.602	0.622	15.10	16.00	
F	0.224	0.248	5.50	6.50	
G	0.539	0.563	13.50	14.50	
H	0.657	0.681	16.50	17.50	
I	3.138	3.161	79.50	80.50	
J	3.650	3.673	92.50	93.50	
K	0.256		6.50		ø
L	0.421	0.445	10.50	11.50	
M	0.815	0.839	20.50	21.50	
O	0.579	0.602	14.50	15.50	
P	0.11X0.032		2.8X0.8		

◆Diode

Maximum Ratings

Symbol	Item	Conditions	Values	Units
I_D	Output Current(D.C.)	Tc=85℃	25	A
I_{FSM}	Surge forward current	t=10mS Tvj =45℃	550	A
i^2t	Circuit Fusing Consideration		1500	A^2s
Visol	Isolation Breakdown Voltage(R.M.S)	a.c.50HZ;r.m.s.;1min	3000	V
Tvj	Operating Junction Temperature		-40 to +125	℃
Tstg	Storage Temperature		-40 to +125	℃
Mt	Mounting Torque	To terminals(M5)	3±15%	Nm
Ms		To heatsink(M6)	5±15%	Nm
Weight	Module（Approximately）		100	g

Thermal Characteristics

Symbol	Item	Conditions	Values	Units
$R_{th(j-c)}$	Thermal Impedance, max.	Junction to Case	0.45	℃/W
Rth(c-s)	Thermal Impedance, max.	Case to Heatsink	0.10	℃/W

Electrical Characteristics

Symbol	Item	Conditions	Values			Units
			Min.	Typ.	Max.	
V_{FM}	Forward Voltage Drop, max.	T=25℃ I_F =75A			1.80	V
I_{RRM}	Repetitive Peak Reverse Current, max.	T_{vj} =25℃ $V_{RD}=V_{RRM}$ T_{vj} =125℃ $V_{RD}=V_{RRM}$	≤0.5 ≤6			mA mA

◆Thyristor
Maximum Ratings

Symbol	Item	Conditions	Values	Units
I_{TAV}	Average On-State Current	Sine 180°;Tc=85℃	25	A
I_{TSM}	Surge On-State Current	T_{VJ}=45℃ t=10ms, sine T_{VJ}=125℃ t=10ms, sine	550 480	A
i^2t	Circuit Fusing Consideration	T_{VJ}=45℃ t=10ms, sine T_{VJ}=125℃ t=10ms, sine	1500 1150	A^2s
Visol	Isolation Breakdown Voltage(R.M.S)	a.c.50HZ;r.m.s.;1min	3000	V
Tvj	Operating Junction Temperature		-40 to +125	℃
Tstg	Storage Temperature		-40 to +125	℃
Mt	Mounting Torque	To terminals(M5)	3±15%	Nm
Ms		To heatsink(M6)	5±15%	Nm
di/dt	Critical Rate of Rise of On-State Current	T_{VJ}= T_{VJM} , 2/3V_{DRM} ,I_G =500mA Tr<0.5us,tp>6us	150	A/us
dv/dt	Critical Rate of Rise of Off-State Voltage, min.	T_J=T_{VJM} ,2/3V_{DRM} linear voltage rise	1000	V/us
a	Maximum allowable acceleration		50	m/s^2

Thermal Characteristics

Symbol	Item	Conditions	Values	Units
Rth(j-c)	Thermal Impedance, max.	Junction to Case	0.90	℃/W
Rth(c-s)	Thermal Impedance, max.	Case to Heatsink	0.20	℃/W

Electrical Characteristics

Symbol	Item	Conditions	Values			Units
V_{TM}	Peak On-State Voltage, max.	T=25℃ I_T =75A			1.80	V
I_{RRM}/I_{DRM}	Repetitive Peak Reverse Current, max. / Repetitive Peak Off-State Current, max.	T_{VJ}=T_{VJM} ,V_R=V_{RRM} ,V_D= V_{DRM}			10	mA
V_{TO}	On state threshold voltage	For power-loss calculations only (T_{VJ} =125℃)			0.9	V
r_T	Value of on-state slope resistance. max	T_{VJ} =T_{VJM}			12	mΩ
V_{GT}	Gate Trigger Voltage, max.	T_{VJ} =25℃ , V_D =6V			2.5	V
I_{GT}	Gate Trigger Current, max.	T_{VJ} =25℃ , V_D =6V			150	mA
V_{GD}	Non-triggering gate voltage, max.	T_{VJ}=125℃,V_D =2/3V_{DRM}			0.25	V
I_{GD}	Non-triggering gate current, max.	T_{VJ} =125℃, V_D =2/3V_{DRM}			5	mA
I_L	Latching current, max.	T_{VJ} =25℃ , R_G = 33 Ω		250	400	mA
I_H	Holding current, max.	T_{VJ} =25℃ , V_D =6V		100	200	mA
tgd	Gate controlled delay time	TVJ=25℃, IG=1A, diG/dt=1A/us	1			us
tq	Circuit commutated turn-off time	T_{VJ} =T_{VJM}	80			us

Performance Curves

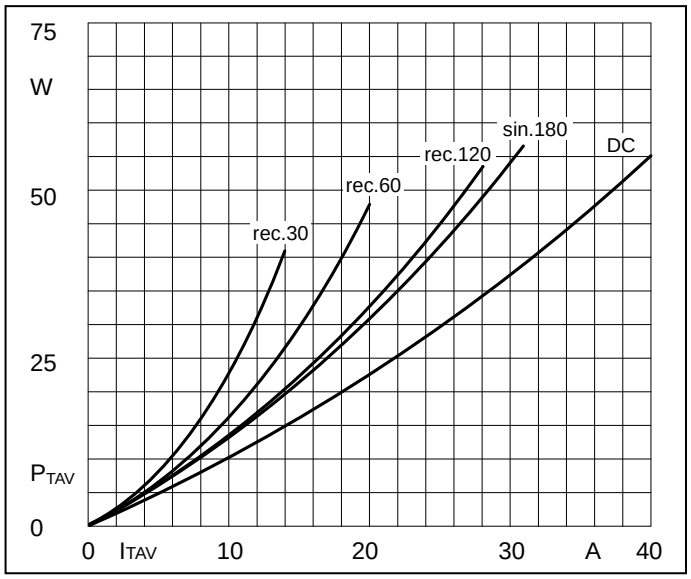


Fig1. Power dissipation

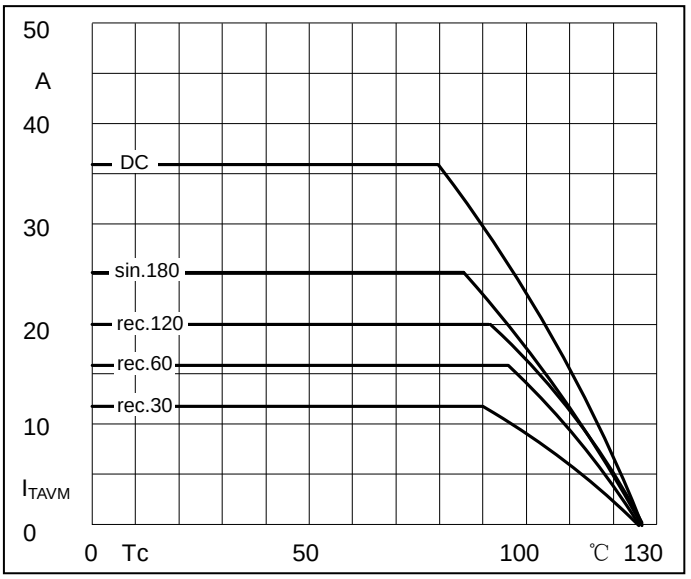


Fig2.Forward Current Derating Curve

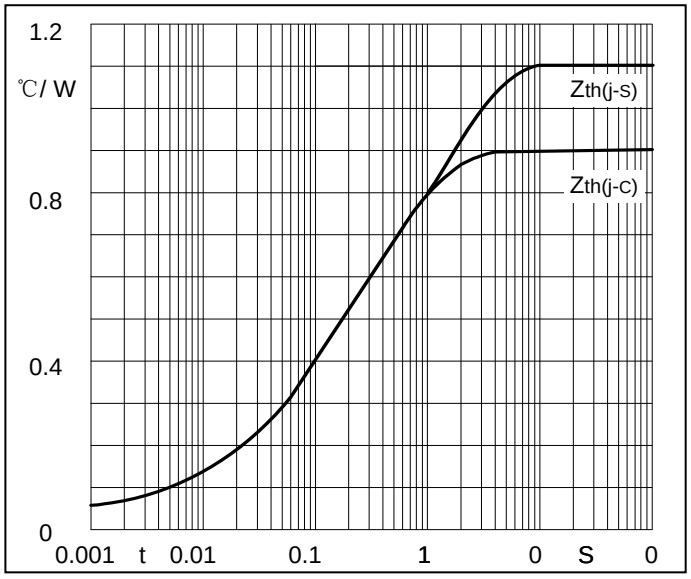


Fig3. Transient thermal impedance

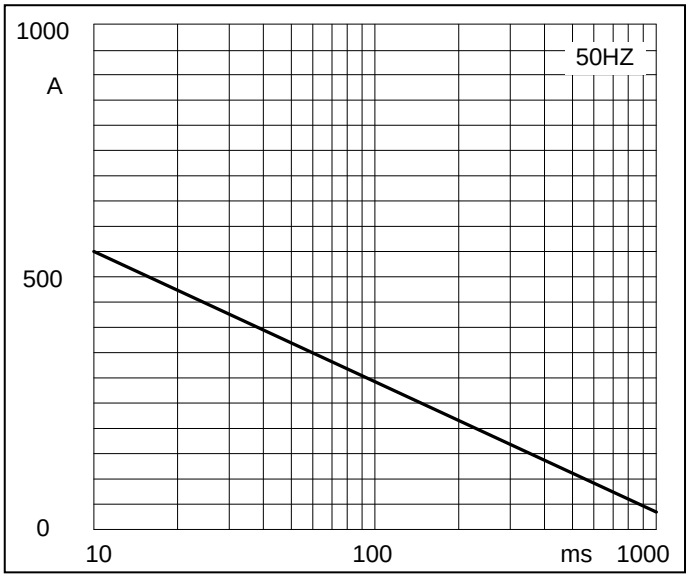


Fig4. Max Non-Repetitive Forward Surge Current

Performance Curves

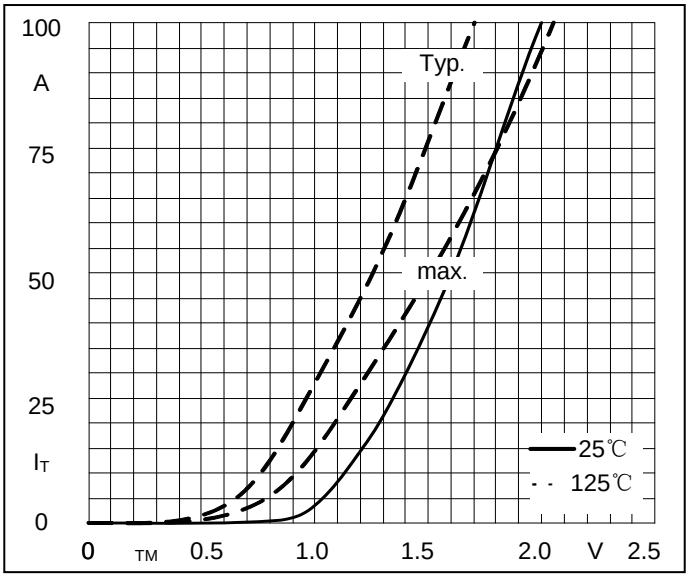


Fig5. Forward Characteristics

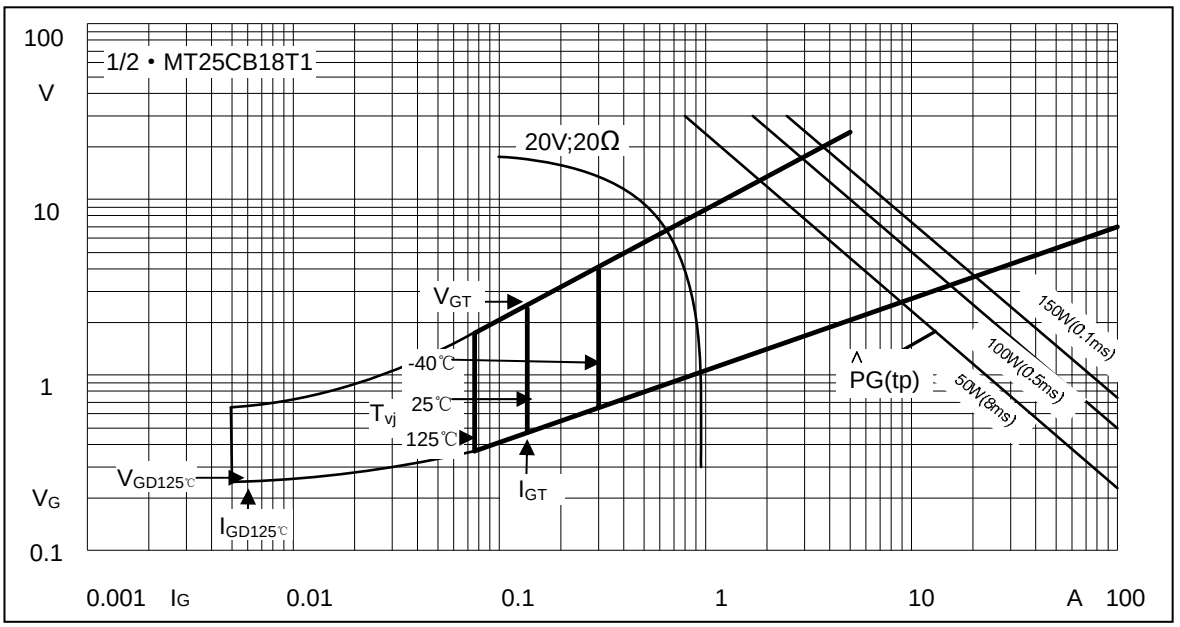


Fig6. Gate trigger Characteristics

Ordering Information

Device	Packing
Part Number-BP	Bulk: 10PCS/BOX ;100PCS/CTN

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